

Abstract

A switchable magnetic device includes a first magnet and a second magnet, both of which are essentially cylindrical. Magnets are housed in a housing made from pole pieces. Pole pieces are ferromagnetic. Lower magnet is fixedly mounted in the housing whilst upper magnet can rotate within the housing. Upper magnet is formed with notches or grooves along its vertical side walls. These notches or grooves receive downwardly depending arms of bar. Bar is received inside a groove formed on boss. Boss is connected to a short bar that, in turn, is fixedly connected to a handle or lever. By this means, rotation of handle or lever causes rotation of second magnet. When the upper magnet is positioned such that its north pole substantially overlies the south pole of lower magnet and the south pole of upper magnet substantially overlies the north pole of lower magnet, the first and second magnets act as an internal active magnetic shunt and as a result the external magnetic field strength from the device is quite low. Rotating the upper magnet 180° about its axis of rotation brings the magnets into alignment such that the respective north and south poles of the upper magnet substantially overlie respective north and south poles of lower magnet. In this alignment, the external magnet field from the device is quite strong and the device can be affixed to surfaces or objects.